

#### ABSTRACT

To use a beam splitting optical system smaller than the conventional beam splitters and to set a longer optical path between a concave, reflective mirror and an image plane. A light beam from an object surface travels through a first converging group to enter a beam splitter, and a light beam reflected by the beam splitter is reflected by a concave, reflective mirror to form an image of patterns on the object surface inside the concave, reflective mirror. A light beam from the image of the patterns passes through the beam splitter and thereafter forms an image of the patterns through a third converging group on an image plane.